DOCUMENT RESUME

ED 244 936 SP 024 408

AUTHOR Lyons, Carol A.
TITLE Consistency between Learning Style Patterns and Teaching Style Behaviors of Prospective Elementary Teachers.
PUB DATE Apr 84
NOTE 24p.; Paper presented at the Annual Meeting of the American Educational Research Association (68th, New Orleans, LA, April 23-27, 1984).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cerebral Dominance; *Cognitive Style; Elementary School Teachers; Field Dependence Independence; Higher Education; Individual Differences; Learning Processes; Locus of Control; Personality Measures; Preservice Teacher Education; *Student Teachers; *Teacher Behavior; *Teaching Styles

ABSTRACT

A followup study was made of a previous investigation of the learning and teaching style of preservice elementary school teachers. In the original study, 20 female education majors were given the Myers-Briggs Type Indicator (MBTI) test to determine individual dominant personality types. The portable Rod and Frame Test, the Group Embedded Figures Test, and the Concealed Figures Test were used to assess cognitive style (field dependence/independence). An electroencephalogram recorded left and right cerebral hemisphere activity during cognitive tasks. Teaching style of the subjects was documented in diaries, observations, and interviews. Two student teachers, with dichotomous learning and teaching style profiles, were the subjects of the followup study. Observations were made of teaching style, and additional data were collected through tape recordings in which the teachers discussed concerns, strengths, and attitudes about teacher performance. Profiles of the student teachers' learning and teaching styles are presented. Cumulative results from this study provided initial evidence that there is a relationship between learning style and teaching style, which is consistent in the learning and teaching patterns of behavior throughout student teaching. Implications for teacher educators are discussed. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED244936

Consistency Between Learning Style Patterns and Teaching Style Behaviors of Prospective Elementary Teachers

Carol A. Lyons

Department of Educational Theory and Practice

The Ohio State University at Newark

Newark, Ohio 43055

Presented at the American Educational Research Association

1984 Annual Meeting at New Orleans, Louisiana

April 1984

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Carol A. Lyons

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SP 024 408

Consistency Between Learning Style Patterns and Teaching Style Behaviors of Prospective Elementary Teachers

Carol A. Lyons

The Ohio State University - Newark

This paper reports results from a follow-up case study investigation of prospective elementary teachers learning and teaching style patterns. Evidence from the original research study (Lyons, 1983) revealed a relationship between prospective teachers learning style patterns and teaching style behaviors. The data suggested that one's learning style represents the characteristic approach an individual brings to the learning situation. The characteristic approach results from structures deeply embedded in personality, cognitive style and neural processing.

This notion that learning style reflects deeper dimensions of an individuals' learning patterns has been supported (Languis, 1981; 1983). Languis (1981) suggested a multifaceted learning style model as a basis for research. The Learning Styles Network task force of the National Association of Secondary School Principals is currently investigating assessment instruments which will reliably measure these multifaceted dimensions (Keefe, in press).

In the original study, twenty female elementary education majors at The Ohio State University volunteered as subjects for the research during the 1981-1982 academic year. The Myers-Briggs Type Indicator (Myers, 1962), a 166 item paper and pencil instrument, determined the prospective teacher's dominant personality type. The portable Rod and Frame Test (Oltman, 1968), Group Embedded Figures Test (Witkin, Oltman, Raskin, & Karp, 1971), and the Concealed Figures Test (Thurstone & Jeffrey, 1965) were used to assess cognitive style (field dependence/ independence). An individual electroencephalogram (EEG) was recorded while each subject performed sequential-analytical and simultaneous-holistic (spatial) cognitive tasks associated with the left and right cerebral hemispheres respectively. Details of the EEG data collection, procedures, and analyses are reported elsewhere (Lyons, 1983).

Results of the original study suggested that individuals classified as dominant sensing or feeling on the Myers-Briggs Type Indicator (MBTI) were more likely to demonstrate a higher percentage of beta wave activity compared with alpha wave activity in the right hemisphere across tasks (greater right hemisphere activation) and to be field dependent, while subjects classified as dominant intuitive or thinking on the MBTI were more likely to demonstrate a higher percentage of beta wave activity compared

with alpha wave activity in the left hemisphere across tasks (greater left hemisphere activation) and to be field independent. Through these quantitative measures, the twenty subjects learning preference/style was determined.

The prospective teachers' teaching style was documented in self-analysis diaries which focused on varied aspects of the instructional process, weekly observations by the researcher while the subjects were practice teaching, and informal interviews which described qualitatively those relationships between the prospective teachers' learning preference/style and teaching preference/style. The results suggested identifiable teaching behaviors/styles which reflected specific learning preferences/styles (Lyons, 1984). The purpose of this paper is to report findings from a follow-up investigation which attempted to determine if there was consistency in learning style patterns and teaching style behaviors during student teaching.

Procedures

The researcher reviewed the results from the original data and identified two student teachers who demonstrated strongly opposite learning styles and teaching styles. Student teacher A was classified as dominant sensing (S) on the MBTI, field dependent on all three measures of cognitive style, and displayed greater right hemisphere activation on the ten tasks measuring

sequential-analytical and simultaneous-holistic (spatial) cognitive processing. Student teacher B was classified as dominant intuitive (N) on the MBTI, field independent on all three measures of cognitive style, and displayed greater left hemisphere activation on the ten cognitive tasks during the EEG data collection.

Data for the follow-up investigation was collected in two first grade classrooms in a middle-class suburban public school. These particular sites were selected because the subjects could be placed with cooperating teachers who had compatible teaching styles (the researcher had placed students in this building for four years and was aware of the teaching style of these two cooperating teachers). In addition, school policies, curriculum, evaluation procedures, and cognitive and age level of the children was uniform making it easier to control for extraneous variables.

Through examination of these two student teachers formal lesson plans, informal and formal interviews, and weekly observations while teaching various subjects (i.e., mathematics, reading, science, social studies, spelling, language arts, literature, health), the researcher documented teaching style patterns of behavior of these prospective teachers. Additional data was collected through tape recordings in which each individual discussed concerns, strengths, and attitudes they held about their teaching performance.

Results

Quantitative and qualitative data collected in the original study was used to describe the learning style of these two student teachers. Through weekly observations, tape recordings, formal lesson plans, and informal and formal interviews, the teaching behaviors/styles of each subject in this follow-up study was documented. The results are reported below for the two student teachers with dichotomous learning and teaching style profiles.

Learning Style Profile of Student Teacher A (dominant sensing, field dependent, simultaneous processor).

Data from the initial research suggested that student teacher A preferred to learn through direct, hands-on experience. While she was concerned with immediate tasks, she had difficulty managing her time to complete required assignments. She was extrinsically motivated, relied on her own personal experiences to solve problems, and was more interested in the practical application of material than the theories or ideas the information may suggest. When it was necessary to memorize something, she used mnemonic devices. She was generally more successful if evaluated by an essay exam or through laboratory work and was genuinely concerned with how others viewed her performance.

This learning behavior is consistent with other research which used the Myers-Briggs Type Indicator (MBTI) to assess

individual differences in learning. There are reports of similar findings for subjects classified as dominant sensing (McCaulley, 1974; Lawrence, 1979, 1982; Isaac, 1975,; Carlyn, 1976). In other studies, field dependent learners were more aware of spatial cues, more able to discern the feelings of others from observation of facial expression, more responsive to social reinforcement, and more sensitive to others for definition of their own values and actions (Wittrock, 1978). These learning characteristics are compatible with those of the dominant sensing, field dependent, simultaneous processor.

Teaching Style Profile of Student Teacher A (dominant sensing, field dependent, simultaneous processor).

This student teacher identified daily organization (i.e., getting to special classes on time, allotting specified amounts of time for each subject area, correcting papers and assigning grades) as a major concern and weakness of her teaching performance. She introduced new concepts through concrete materials prior to moving into the abstract. These concepts were reinforced by relating them to personal interests and experiences of the children, oftentimes in humanized or story format. She was interested in the global aspects of the curriculum and preferred intergrated thematic units or webs (cf. Fox & Allen, 1983) when developing lessons.

While formal evaluations were required by the administration, this student teacher identified informal evaluation as a more valid and reliable means of assessment. She would tape record specific classes and discussion groups and then listen to the tape in order to make careful observation and notations of the students behavior. She would then analyze her own teaching methods and strategies according to how the students seemed to feel about the lesson, the verbal and nonverbal cues they displayed. This student teacher was generally very positive about a child's ability to succeed and was sensitive to children who were having difficulty and needing additional support and help. She would openly display physical and verbal expressions of approval and warmth.

This behavior is again consistent with Ramirez and Castaneda (1974), who report similar teaching patterns of behavior for field dependent individuals. Additional support for a dominant sensing individual's teaching style as described is evident in research which used the Myers-Briggs Type Indicator (MBTI) in assessing the teaching/learning process (McCaulley, 1974; Lawrence, 1979, 1982).

Learning Style Profile of Student Teacher B (dominant intuitive, field independent, sequential processor).

Data collected in the initial study suggested that this student teacher preferred to learn through reading, lecture, and theorizing. She was intrinsically motivated and enjoyed

assimilating abstract concepts and theories to generate new ideas, projects, and research. This individual tended to be task-oriented, inattentive to the social environment when working. She was a good organizer, able to effectively convey ideas orally and through writing. She often skimmed pages when reading and was able to recognize, respond to, and understand how sentences, paragraphs, and longer discourse was organized. This ability allowed her to quickly infer what information was most important, store that information in words, and then successfully take objective exams.

This description of student teacher B's learning patterns is consistent with learning style profiles discussed in personality and cognitive style research. For example, Isaac (1975) postulated that the intuitive individual is motivated by self-fulfilling experiences which invite exploration, inquiry, and experiencing in their own right. Carskadon (1981) suggested that individuals with a preference for the intuitive process rely upon ideas and associations that the unconscious tacks onto perceptions coming from the senses and that they are more interested in the possibilities suggested by incoming data rather than the data itself. Wittrock (1978) reported that field independent learners are relatively individualistic, insensitive to the feelings and reactions of others, seem to be intrinsically motivated, less

likely to respond to or want social reinforcement and are more likely to follow internalized values and beliefs than peer pressures or immediate contextual cues.

Teaching Style Profile of Student Teacher B (dominant intuitive, field independent, sequential processor).

This prospective teacher identified inflexibility as a major concern and weakness in her teaching. She was very task-oriented, managed classroom time effectively, and became impatient if a lesson did not finish on time.

This subject emphasized inductive learning and the discovery approach; starting with isolated parts of the curriculum and slowly putting them together to construct rules or generalizations. Her lesson plans delineated specific objectives to be met and were carefully sequenced. While she introduced new concepts through concrete material, the subject matter was consistently reinforced through written materials which focused on specific facts or principles to be learned.

Weekly self-made evaluations and informal observation guides were used to assess the student's progress in each subject. The observation guides identified objectives for each lesson and specific behaviors the teacher should look for to determine if the objectives were met. The results were tallied and instructional decisions were made based on the outcome.

Again, this teaching behavior is consistent with teaching patterns of behavior reported in personality and cognitive style literature. In describing the teaching style of the intuitive personality type, Lawrence (1979) reports that intuitives emphasize concepts and relationships when teaching the subject matter. According to Ramirez and Castaneda (1974) field independent teachers emphasize details of the concepts they are presenting, demonstrating that the parts have meaning of their own. They focus students' attention on assigned tasks, encouraging them to complete tasks before going on to something new.

Figures 1 and 2 are provided so that the reader can better understand, compare, and draw conclusions about the diverse teaching styles (i.e., methods of instruction and evaluation procedures) of student teachers A and B.

Conclusion

Cumulative results from this case study follow-up investigation provide initial evidence that 1) there is a relationship between learning style and teaching style and 2) that there is consistency in learning and teaching patterns of behavior throughout student teaching. If this consistency prevails during student teaching, it would seem likely to expect that the reported teaching style patterns of behavior will be evident throughout the subject's teaching career.

Other data that was not reported here, further substantiated these preliminary conclusions. In brief, results from the case study were reported at weekly seminar meetings. During these sessions, similarities and differences in learning and teaching styles among the two subjects were discussed, analyzed, and evaluated. It was decided that if these first grade student teachers worked together in organizing, developing, instructing, and evaluating lessons, the learning situation would be approached from different perspectives and they would be able to expand their repertoire to communicate and teach to different types of students.

As a result of this team effort, the entire group came to five realizations. First, when prospective teachers investigate and understand their own learning preferences/styles, they can begin to recognize how their learning style affects their teaching style. Second, learning patterns/styles are not content or material specific, but process specific. Therefore, it is possible to develop alternative teaching strategies for any subject. Third, by developing alternative approaches for instruction, prospective teachers begin to have a healthy respect for the uniqueness of other learning preferences and are better able to identify students with different learning patterns in their classrooms. Fourth, teachers need to adjust their teaching

style to accommodate individual learning needs and styles among their students if wholeness in educational practice is to be attained. Finally, the most effective way to meet individual learning needs is to develop integrated lessons. An integrated literature lesson is fully described elsewhere (Lyons and Languis, 1984).

Implications

Prospective teachers should be aware of substrates which characterize individuals' learning patterns of behavior. A teacher education program of study which sensitizes participants to the existence of individual learning process constructs would create an atmosphere of inquiry which could lead to an awareness of self and others as functioning as everyday scientists in a quest for appropriate learning strategies. This quest could potentially enhance one's own freedom to understand, develop, and strengthen their learning processes and potential and subsequently teach children how to know, understand, develop and strengthen their own learning potential. Teachers need to learn how to deal with the idiosyncratic dimensions of their own and others' learning behaviors if excellence in education is to be attained.

Figure 1

Formal literature lesson plan developed by Student Teacher A

Dominant sensing, field dependent, simultaneous teaching style profile

Grade: 1

Subject: Language Arts - Children's literature

Group: entire class

Goals:
1. To provide children an opportunity to interpret a book through art, writing, and oral expression.
2. To stimulate children's imagination
3. To sensitize children to others' feelings

Behavioral Objectives:
1. After hearing the story Sylvester and Magic Pebble, the students will be able to draw a picture which illustrates something that they are happy about and something that they wish for.
2. The students will be able to write short sentences describing their illustrations.
3. The students will be able to discuss and explain their pictures to their classmates in a small group format.

Figure 1 (continued)

Procedure: (Materials)

1. Book - Sylvester and the Magic Pebble by William Steig
2. "Magic" pebbles (any small pebbles)
3. Paper
4. Tape recorder

(Motivation)

1. Share with children what I wished for as a child.
2. Discuss the students wishes.
3. Tell the students that they are going to hear a story about a donkey that was able to make wishes that really came true.

(Instruction)

1. Read the book Sylvester and the Magic Pebble.
2. Ask the children questions about the story.

   What was Sylvester's hobby?

   What was the first wish he made that came true?

   How did he feel when the wish came true? How would you feel if you were Sylvester?

   Why did he turn himself into a rock? Would you do the same thing?

Figure 1 (continued)

How did his parents feel when Sylvester did not return?

What did they do to find him? What would you have done?

How did his parents feel when they did find him?

How could you tell they were grateful?

3. Give each child a "magic" pebble. Ask them to close their eyes and pretend that it was magic. Ask them to visualize what they would wish for.
4. Ask the children to think about something that they would not change.
5. Provide children a blank sheet of paper divided into two sections.
6. Have children draw and label something that makes them happy and something that they would wish for.
7. Divide class into groups of three to discuss their pictures.
8. Tape record the discussions
9. Display the pictures.

Figure 1 (continued)

Evaluation: After listening to the taped discussions, respond to the following statements.

1. Children were attentive and actively participating in the small-group discussions.
2. Children's contributions to the discussion showed their ability to relate other books they have read and experiences they have had to Sylvester and the Magic Pebble.
3. Children's discussions suggested creativity and sensitivity to the feelings of others.
4. Children listened attentively to what others said and were able to build upon their comments.
5. Taped discussions suggested that the children enjoyed this activity and had a positive experience.

Figure 2

Formal literature lesson plan developed by Student Teacher B

Dominant intuitive, field independent, sequential teaching style profile

Grade: 1

Subject: Language Arts - Children's literature

Group: entire class

Goals: 1. To evaluate the listening comprehension of children

2. To provide children an opportunity to draw a picture and make an appropriate label to describe it.

Behavioral Objectives: 1. The students will be able to retell a story with 90-100% accuracy.

2. The students will be able to identify and draw specific main ideas in the story.

3. The students will be able to label and arrange each event in the story in the appropriate sequence.

Procedures: (materials)

1. Book - Sylvester and the Magic Pebble by William Steig
2. Paper
3. Test ditto

Figure 2 (continued)

(Motivation)

1. Discuss the difference between real and imaginative.
2. Make a list of events that are real and make-believe.
3. Tell children that in the story they are about to hear, they are to decide if the events are real or make-believe.

(Instruction)

1. Read the book Sylvester and the Magic Pebble.
2. Make a chart divided into three sections: beginning, middle, and end.
3. Solicit from children events that happened which belong in each section.
4. Divide the class into three groups. Have each group take one of the three sections and make individual pictures depicting separate events which occurred in the beginning, middle, and end of the story.
5. Each member of the group labels his/her picture in the appropriate order.
6. Children will retell the story in sequence using their pictures as cues.

Figure 2 (continued)

Evaluation:

1. Listen carefully to retelling to determine if major events in the story are retold in sequence.
2. Test comprehension (sequencing skill) through ditto. Children are required to number the statements in Sylvester and the Magic Pebble in the proper order.
3. Throughout the week have children individually retell Sylvester and the Magic Pebble. During these retellings respond positively or negatively to each of the following statements for every child (informal observation).
   (a) The child is able to retell a story he/she has heard in sequence.
   (b) The child's retelling includes story conventions such as traditional beginnings and endings.
   (c) Child's retelling show an influence of the syntax and vocabulary of the language in the book.

References

Carlyn, M. (1976). The relationship between Myers-Briggs personality characteristics and teaching preferences of prospective teachers (Doctoral dissertation, Michigan State University, 1976). Dissertation Abstracts International, 37, 3493 A.

Carskadon, T. G. (1981). Research in psychological type (Vol. 3). Mississippi: University of Mississippi, Department of Psychology.

Fox, S.E. & Allen, V.G. (1983). The language arts an integrated approach. New York: Holt, Rinehart and Winston.

Isaac, S.W. (1975, October). Personality types, learning styles and teaching strategies: From learning theory and research to educational practice. Paper presented at the First National Conference on the Myers-Briggs Type Indicator, Gainesville, FL.

Keefe, J.W. (in press). An analysis of learning style measures. In M.L. Languis & P. Naour (Eds.), Cognitive Science: Contributions to Educational Practice). Washington, D.C.: Education and Research Information Center.

Languis, M.L. (1981, April). Learning style: A point of view for valuing young learners. Paper presented at the National Association for the Education of Young Children National Conference, Detroit, MI.

Languis, M.L. (1983). Learning style: Model for research. (ERIC Document Reproduction Service No. ED 23518)

Lawrence, G. (1979). People types and tiger stripes: A practical guide to learning styles. Gainesville, Florida: Center for Applications of Psychological Type.

Lawrence, G. (1982). Personality structure and learning style: Uses of the Myers-Briggs Type Indicator. In National Association of Secondary School Principals (Ed.), Student Learning Styles and Brain Behavior (pp 92-105). Reston, Virginia: National Association of Secondary School Principals.

Lyons, C.A. (1983). The relationship of prospective teachers' neural processing, cognitive style, and personality type to classroom learning and teaching behaviors (Doctoral dissertation, The Ohio State University, 1983). Dissertation Abstracts International, 44, 68 A.

Lyons, C.A. (1984, April). The relationship between prospective teachers learning preference/style and teaching preference/style. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Lyons, C.A. & Languis, M.L. (1984). Understanding your own learning processes can improve your teaching. Manuscript submitted for publication.

McCaulley, M.H. (1974, April) The Myers-Briggs Type Indicator and the teaching-learning process. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Myers, I.B. (1962). The manual for the Myers-Briggs Type Indicator. Palo Alto, California: Consulting Psychologists Press.

Oltman, P. K. (1968). A portable rod-and-frame apparatus. Perceptual and Motor Skills, 26, 503-506.

Ramirez, M., & Castaneda, A. (1974). Cultural democracy, bicognitive development and education. New York: Academic Press.

Steig, W. (1969). Sylvester and the Magic Pebble. New York: Windmill Books.

Thurstone, L.L. & Jeffrey, T.E. (1965). A manual for closure flexibility (concealed figures). Chicago, Illinois: Industrial Relations Center.

Witkin, H.A., Oltman, P.K., Raskin, E., Karp, S.A. (1971). A manual for embedded figures tests. Palo Alto, California: Consulting Psychologist Press.

Wittrock, M.C. (1978). The cognitive movement in instruction. Educational Psychologist, 13, 15-29.